National Institute of Environmental Health Sciences

# Risk-based climate-change impact assessment for the water industry

**Author(s):** Thorne OM, Fenner RA
**Year:** 2009
**Journal:** Water Science and Technology : A Journal of The International Association on Water Pollution Research. 59 (3): 443-451

**Abstract:**

In response to a rapidly changing and highly variable climate, engineers are being asked to perform climate-change impact assessments on existing water industry systems. There is currently no single method of best practice for engineers to interpret output from global climate models (GCMs) and calculate probabilistic distributions of future climate changes as required for risk-based impact assessments. The simplified climate change impact assessment tool (SCIAT) has been developed to address the specific needs of the water industry and provides a tool to translate climate change projections into 'real world' impacts or for detailed statistical analysis. Through the use of SCIAT, water system operators are provided with knowledge of potential impacts and an associated probability of occurrence, enabling them to make informed, risk-based adaptation and planning decisions. This paper demonstrates the application of SCIAT to the consideration of the impacts of climate change on reservoir water quality under future climate scenarios.

**Source:** http://dx.doi.org/10.2166/wst.2009.877

## Resource Description

**Climate Scenario :**

specification of climate scenario (set of assumptions about future states related to climate)

Special Report on Emissions Scenarios (SRES)

**Special Report on Emissions Scenarios (SRES) Scenario:** SRES A2, SRES B1

**Communication:**

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

**Communication Audience:**

audience to whom the resource is directed

Policymaker

**Other Communication Audience:** Water system operators

**Exposure :**

weather or climate related pathway by which climate change affects health

Food/Water Quality

**Geographic Feature:**

resource focuses on specific type of geography

Freshwater

**Geographic Location:**

resource focuses on specific location

Non-United States

**Non-United States:** Australasia

**Health Impact:**

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

**Intervention:**

strategy to prepare for or reduce the impact of climate change on health

A focus of content

**Mitigation/Adaptation:**

mitigation or adaptation strategy is a focus of resource

Adaptation

**Model/Methodology:**

type of model used or methodology development is a focus of resource

Exposure Change Prediction

**Resource Type:**

format or standard characteristic of resource

Research Article, Research Article

**Timescale:**

time period studied

Long-Term (>50 years)

**Vulnerability/Impact Assessment:**

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content